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Consumers Food Protection Association
643 14th, Menlo Park, CA 94025

SWRCB: Sept 10 1999

Re: Sewage Sludge (Biosolids) Land Application DEIR Comments

Dear SWRCB Board:

We object to this proposal and its EIR.
We support the Total Land Application Ban Alternative.

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We appreciate the goals of the Sludge Land Application as Recycling as much of our state's waste as possible is the right direction. Unfortunately, this proposal has more scientific holes and legal loopholes than a sieve. We have serious concerns about -

1) potentially significant impacts which the project could cause and which are not described or analyzed as required by California's Environmental Quality Act (CEQA) Public Resources Code 21000 et seq., and

2) that these impacts can never be adequately mitigated.

As you know the threshold for significant impacts is the "Fair argument" standard. The trigger is easily met by the impacts described below.

INTRODUCTION
Rachel's Environment & Health Weekly published a two part series on sewage sludge in August 1997 where they set the stage for examining this proposed project

> "If human wastes were the only substances entering the sewage treatment plant, then sewage sludge would contain valuable nutrients and should be returned to the land." "Unfortunately, most sewage treatment plants receive industrial and commercial wastes, which are then mixed with the human wastes, creating a poorly-understood mixture of nutrients and dangerous industrial poisons. Furthermore, many American cities have built sewage systems that mix storm water runoff with their regular sewage; every time a rain storm scours these cities' streets, additional toxins are added to the sewage sludge." "The fundamental problem with sewage sludge is that its four main categories of potential pollutants – nutrients, pathogens, toxic organics, and heavy metals --behave differently and cannot all be managed by any single kind of treatment.[8]"

47-1

> As a result, sewage sludge contains a strange brew of nutrients laced with low levels of PCBs [polychlorinated biphenyls]; dioxins and furans; chlorinated pesticides [such as DDT, DDD, DDE, dieldrin, ALDRIN (emphasis added); endrin, chlordane, heptachlor, lindane, mirex, kepone, 2,4,5-T, and 2,4-D]; carcinogenic polynuclear aromatic hydrocarbons [PAHs]; heavy metals [arsenic, mercury, lead, selenium, cadmium, etc.]; bacteria, viruses, parasitic worms, and fungi;[1] industrial solvents; asbestos; petroleum products, and on and on. American industry uses roughly 70,000 different chemicals and any of these can be found in sewage sludge –depending on who's pouring what down the drain at any given time and place. In addition to the original chemicals, unique metabolites and degradation products develop anew in sludge. To give but one example: trimethylamine can be converted to the powerful carcinogen, dimethylnitrosamine.[2]" [A,B] [2]" [A,B] This describes your proposed "EC" well

47-1 (cont)

* Residential, commercial and industrial sewage are all combined in this sludge - there are no separate treatment facilties handling the pollutants occuring from industrial wastewater, specifically heavy metals. Can storm runoff get in the sludge? The document is required to but fails to inform us.

* California is the top state in the U.S. in pounds of pesticide use - The likely contamination of sewage sludge with dangerous pesticides is very high.

* As proposed, this GO does not adequately monitor this mix of poisons.
What potential hazardous ingredients could be added? What potential ingredients could be added to dilute (but not remove) the poisons? (Dilution is the Solution to Pollution)

* The resulting product is intended to be used off-site in the future. Such poisons as lead and other heavy metals can bioaccumulate in the soil.
* This project has substantial loopholes that allow hazardous pollutants and pathogens to cascade through and potentially cause serious, adverse, long-range human and environmental impacts.

THERE IS NO LIST OF RESPONSIBLE AGENCIES. (ES-17)
We find it incredible that you have not named each of the following as Responsible Agencies -

US-Fish & Wildlife Service (Listed mammals, bird, reptiles and amphibians), US-National Marine Fisheries Service (Anadromous fish e.g. coho, steelhead), US-Army Corps of Engineers (Clean Water Act oversight), National Forest Service, Region 5 (NFMA oversight of animal species), EPA Region 9 (numerous oversights), California Dept of Fish and Game (ESA oversight), California Department of Health Services (human health oversight), California Coastal Commission (farmlands adjacent to coastal zone), California Department of Pesticide Regulation, California Air Resources Board

47-2

Please rewrite the DEIR including the above agencies as responsible agencies under CEQA, consult with them, then recirculate as a Draft.

"BIOSOLIDS" IS DOUBLESPEAK - USE "SEWAGE SLUDGE"
Doublespeak is becoming so common there is a newsletter devoted entirely to exposing the most egregious examples. It is published by the National Council of Teachers of English. William Lutz of Rutgers University a former editor of the newsletter wrote a book "DOUBLESPEAK" in 1983 published by Harper Collins. Parade magazine called "DOUBLESPEAK" "One of the most informative, amusing, and frightening books we've read in years." TV Talk show host Larry King wrote "Bill Lutz is the 1990 George Orwell."

47-3

HAVE TO DESTROY IT TO SAVE IT
"Generating Acres for Restoration" is a variation on "We had to destroy the village in order to save it." It is often used to try to hide ecosystem destruction with a pleasant sounding phrase. (U.S. Forest Service 1995) A new variation of this is "we have to burn a forest to keep it healthy."

47-4

We take particular disdain in the misuse of words to hide environmental harm. Your DEIR does this.

The book, "Toxic Sludge Is Good For You" (Stauber & Rampton, 1995) explains the CAMPAIGN by the Water Environment Federation (formerly known as Federation of SEWAGE Works Associations) to -

1. Come up with a term to hide the offensive term "sewage," and
2. "Get people to stop calling it sludge" (pg 100)

"The Water Environment Federation is actually the sewage industry's main trade, lobby and public relations organization, with over 41,000 members and a multi-million dollar budget that supports a 100 member staff." -Toxic Sludge Is Good For You, pg 165

Your DEIR admits that the real term is "Sewage Sludge" and that "Biosolids" is the subsidiary term in the Executive Summary pge ES-5 The vast majority of your citations (Chapter 16) which mention either "Sewage Sludge" or "Biosolids" in their title, use the term "Sewage Sludge" in its own title.

Under the DEIR's Public Health Citations at least thirty three (33) references include the term "Sludge" or "sewage" while only five (5) use the term "biosolids."

Among the hardest to refute is the 1996 National Academy of Sciences paper which uses the term "sludge" in a reference title you cite under Public Health. The spelling checker for this word processing program does not recognize the term "biosolid" but "sewage", "Sludge" and "sewage sludge" all are recognized.

Finally upon examining all seven dictionaries at our local university's library - none (zero) include the term "biosolid", yet all include the terms "sewage", "Sludge" and "sewage sludge." Please remove all use (especially in the proposed General Order Title and the EIR Title) of the euphemism "Biosolids" and restore them with the far clearer, more familiar and more apparent term "Sewage Sludge." Failing to do so may be a violation of CEQA which places a high priority on Public participation. Use of this euphemism precludes public participation by hiding the real topic from those unfamiliar (including scientists) with the term "biosolid."

(As an alternative "Humanure enhanced with industrial waste" might be acceptable. Barely kidding.)

47-4 (cont)

EVERY LOAD OF SLUDGE MUST BE TESTED AT SOURCE
Sewage agencies receive waste which they turn into sludge from many sources and areas. This is not mentioned nor are the monitoring capabilities (or lack thereof) of the sources evaluated or described. Each potential source must be analyzed for potential impacts of pollutants or all non-evaluated sources must be prohibited by a condition of approval. The document fails to define the criteria used to reject sludge loads. Sludge must be carefully tested to meet clearly defined criteria. Criteria must be disclosed in advance of CEQA approval.

Sludge can vary widely in composition from hour to hour. For example: When commercial and industrial operations shut down at 5pm on Fridays the sludge changes its composition. Every load of sludge should be tested. Not necessarily every truckload, but every batch provided by each different sludge vendor.

47-5

Sludge testing times are undefined.
Testing on weekends when commercial and industrial waste is not in the waste stream is not acceptable. Sludge testing must be done during typical and worst case waste stream conditions.

Unqualified staff for monitoring verification must be prohibited. Qualifications of monitoring personnel are undefined. Monitoring personnel must be specifically trained and pass rigorous tests to perform these tasks. Rigorous training and testing of Monitoring personnel must be a condition of project approval. Untrained and untested personnel must be prohibited from performing monitoring.

47-6

SEWAGE VENDORS DO NOT TEST ADEQUATELY
At least one major Sludge vendor has a track record of inadequate testing ability. NPDES Monitoring Reports show a pattern of -
1) Permit violations
2) Failure to complete required tests
3) Failure to properly perform tests
4) Failure to find adequate testing laboratory for standard pollutants (DDT, Toxaphene, Beryllium).

47-7

Sewer Districts are IN-adequate monitors of sludge poisons which could potentially be present in sludge intended for use on agricultural land and could bioaccumulate and show up in agriculture or food products. Any agency's capability to adequately test for contamination must be analyzed for potential impacts (e.g. testing failures) or the project approval must specify a qualified third party to test sludge prior to its use on land application.

47-7 (cont)

THE DOCUMENT FAILS TO DEFINE AND LIMIT INGREDIENTS IN SLUDGE.
According to one sludge vendor (Sewer Agency) they receive waste from over 10,000 commercial and 50 industrial customers. This industrial and commercial waste goes into the sludge proposed for your project. The types and quantities of the potentially hazardous waste products from these customers must be disclosed and studied. As the project is loosely defined and constrained now, DDT and asbestos could be in the sludge and end up undetected in the finished product. Strict definitions of what hazardous pollutants are allowed and prohibited must be prepared and provided for agency and public review.

Rachel's Environment & Health Weekly series describes the impacts of sludge on agricultural fields:

> "As Robert Goodland of the World Bank and waste consultant Abby Rockefeller have recently written, "Land application [of sludge] was implemented in Sweden in the early 1980s with disastrous results, which to date the U.S. EPA seems to be ignoring. Such a practice must lead to accumulation in living tissues of heavy metals and persistent organic chemicals: first they accumulate in the soil, then in decomposer microbes and soil-conditioning invertebrates. Other life forms are damaged as thousands of non-biocompatible substances move up the food chain. The toxic effect on crops, as well as on the consumers of such crops, is buying risks for the future."[8b] It has been shown, for example, that sewage sludge applied to soils can increase the dioxin intake of humans eating beef (or cow's milk) produced from those soils.[9]"

47-8

Rachel's Environment & Health Weekly article describes the impacts of EPA's failure to adequately regulate heavy metals and other pollutants:

> "EPA issued numeric standards for 10 metals (arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc).[8] However, the movement of metals from soils into groundwater, surface water, plants, and wildlife --and of the hundreds of other toxins in sludge, which EPA chose not to regulate --are poorly understood.[12] Their movement depends upon at least the following factors: plant species, soil type, soil moisture, soil acidity or alkalinity, sludge application rate, slope, drainage, and the specific chemistry of the toxins and of the sludge itself.[13,14]"

Lettuce and other Produce could be adversely affected and pose health hazards:

> "Research clearly shows that, under some conditions (which are not fully understood), toxic metals and organic industrial poisons can be transferred from sludge-treated soils into crops.[19] LETTUCE (emphasis added), spinach, cabbage, Swiss chard, and carrots have all been shown to accumulate toxic metals and/or toxic chlorinated hydrocarbons when grown on soils treated with sewage sludge.[20,21,22,23,24]" [1]

LEAD, PESTICIDES AND ASBESTOS ARE NOT PROHIBITED IN THE SLUDGE.
These materials are commonly used in local commercial and industrial applications. They are a potentially significant impact and must be analyzed BEFORE project approval. For example,according to one Regional Water Quality Control Board (a Sewage District has detected the pesticide "Aldrin" in October and November of 1997.

47-9

The following direct pollutants have been found in sludge.
Their potential in the sludge proposed must be evaluated and should be prohibited:

PCBs [polychlorinated biphenyls]; dioxins and furans; chlorinated pesticides [such as DDT, DDD, DDE, dieldrin, ALDRIN (emphasis added), endrin, chlordane, heptachlor, lindane, mirex, kepone, 2,4,5-T, and 2,4-D]; carcinogenic polynuclear aromatic hydrocarbons [PAHs]; heavy metals [arsenic, mercury, lead, selenium, cadmium, etc.]; bacteria, viruses, parasitic worms, and fungi;[1] industrial solvents; asbestos; petroleum products and certainly dihydrogen monoxide which has been detected in many, if not most, agriculture products grown in the Central Valley according to the California Department of Toxic Substance Control.

47-10

A list of chemicals and pesticides permitted in each service area should be obtained from the State Dept of Pesticide Regulation and their impacts must be evaluated and prohibited. Any chemical used could end up in the sewer system and thus in the sludge and should be tested for.

In addition to the original chemicals, unique metabolites and degradation products develop anew in sludge. To give but one example trimethylamine can be converted to the powerful carcinogen, dimethylnitrosamine. All harmful degradation products must be prohibited.

47-10 (cont)

LEAD
Your allowable 350 mg/kg concentration for Lead is an outrageously high risk for human health.
Lead is a Cumulative Poison
Lead causes Irreversible Tissue Damage
Lead is the Most toxic of the 20 most hazardous toxics
Lead Accumulates in bones and soft tissue
Lead Can only be cleaned from soft tissue, not from bones. ATSDR - ToxFAQs - Lead

ToxFAQs Lead April 1993
Agency for Toxic Substances and Disease Registry
This fact sheet answers the most frequently asked health questions about lead. For more information, you may call 404-639-6000. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY. Exposure to lead happens mostly from breathing workplace air or dust, and eating contaminated foods. Children can be exposed from eating lead-based paint chips, or playing in contaminated soil. Lead can damage the nervous system, kidneys, and the immune systems. Lead has been found in at least 922 of 1,300 National Priorities List sites identified by the Environmental Protection Agency.

Lead has many different uses, most importantly in the production of batteries. Lead is also in ammunition, metal products (solder and pipes), roofing, and devices to shield x-rays.
Because of health concerns, lead from gasoline, paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years.

47-11

What happens to lead when it enters the environment?
Lead itself does not break down, but lead compounds are changed by sunlight, air, and water. When released to the air from industry or burning of fossil fuels or waste, it stays in air about 10 days.
Most of the lead in soil comes from particles falling out of the air.
City soils also contain lead from landfills and leaded paint.
Lead sticks to soil particles.
It does not move from soil to underground water or drinking water unless the water is acidic or "soft".
It stays a long time in both soil and water
How might I be exposed to lead?
Breathing workplace air (lead smelting, refining, and manufacturing industries)
Drinking water that comes from lead pipes or lead soldered fittings
Breathing or ingesting contaminated soil, dust, air, or water near waste sites
Eating contaminated food grown on soil containing lead or food covered with lead-containing dust
Breathing fumes or ingesting lead from hobbies that use lead (leaded-glass, ceramics)

How can lead affect my health?
Lead can affect almost every organ and system in your body. The most sensitive is the central nervous system, particularly in children. Lead also damages kidneys and the immune system. The effects are the same whether it is breathed or swallowed

Exposure to lead is more dangerous for young and unborn children. Unborn children can be exposed to lead through their mothers. Harmful effects include premature births, smaller babies, decreased mental ability in the infant, learning difficulties, and reduced growth in young children. These effects are more common after exposure to high levels of lead.

In adults lead may decrease reaction time, cause weakness in fingers, wrists, or ankles, and possibly affect the memory. Lead may cause anemia, a disorder of the blood. It can cause abortion and damage the male reproductive system. The connection between these effects and exposure to low levels of lead is uncertain.

How likely is lead to cause cancer?
The Department of Health and Human Services (DHHS) has determined that lead acetate and lead phosphate may reasonably be anticipated to be carcinogens based on studies in animals. There is inadequate evidence to clearly determine lead's carcinogenicity in humans.

Is there a medical test to show whether I've been exposed to lead?
A blood test is available to measure the amount of lead in your blood and to estimate the amount of your exposure to lead. Blood tests are commonly used to screen children for potential chronic lead poisoning. The Centers for Disease Control and Prevention (CDC) considers children to have an elevated level of lead if the amount in the blood is at least 10 micrograms per deciliter (10 g/dL). Lead in teeth and bones can be measured with X-rays, but this test is not as readily available

Has the federal government made recommendations to protect human health?
The Centers for Disease Control and Prevention (CDC) recommends all children be screened for lead poisoning at least once a year. This is especially important for children between 6 months and 6 years old.
The Environmental Protection Agency (EPA) requires lead in air not to exceed 1.5 micrograms per cubic meter (1.5 ug/m^3) averaged over 3 months. The sale of leaded gasoline is illegal as of December 31, 1995. EPA limits lead in drinking water to 15 micrograms per liter (15 ug/L).
The Consumer Product Safety Commission (CPSC), EPA, and the states control the levels of lead in drinking water coolers. Water coolers that release lead must be recalled or repaired. New coolers must be lead-free. Drinking water in schools must be tested for lead.

47-11 (cont)

The Department of Housing and Urban Development (HUD) requires that federally funded housing and renovations, public housing, and Indian housing be tested for lead-based paint hazards. Hazards must be fixed by covering the paint or removing it

The Occupational Safety and Health Administration (OSHA) limits the concentration of lead in workroom air to 50 ug/cubic meter for an 8-hour workday. If a worker has a blood lead level of 40 ug/dL, OSHA requires that worker to be removed from the workroom.

Carcinogenicity Ability to cause cancer.
Anemia Low numbers of red blood cells or hemoglobin.
Ingesting Taking food or drink into your body.
Microgram (ug) One millionth of a gram.

References
Agency for Toxic Substances and Disease Registry (ATSDR). 1993. Toxicological profile for lead. Atlanta: U.S. Department of Health and Human Services, Public Health Service.

Agency for Toxic Substances and Disease Registry (ATSDR). 1993. Case studies in environmental medicine: Lead toxicity. Atlanta: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information?
ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns. For more information, contact: Agency for Toxic Substances and Disease Registry Division of Toxicology 1600 Clifton Road NE, Mailstop E-29 Atlanta, GA 30333 Phone: 404-639-6000 and U.S. Department of Health and Human Services Public Health Service Agency for Toxic Substances and Disease Registry

PESTICIDES

The SOC analysis (pg 3-17) is another outrageous avoidance of potential environmental impact analysis and disclosure. If the organic compounds are "volatile, and so lost" or "are quickly lost to the atmosphere" - they constitute air pollution and must be analyzed as a environmental air pollution impact.
There is no getting around it as your DEIR tries to so - you must either analyze the impacts of the toxic chemicals in the soil or in the air - but you cannot avoid both. In fact CEQA requires that you not avoid either. So do both. 47-12

EPA's REFERENCE DOSE IS MEANINGLESS
The Reference Doses (RfD) used throughout this DEIR (pg E-38) are literally and absolutely meaningless because RfD allows multiplication by zero! As you may know multiplying any value by zero equals zero. This makes the RFD wholly a judgment - rather than an objective measure of anything. A pesticide with an extremely high risk and hazard could be made to appear safe with the use of a Modifying Factor of 0.000001
US-EPA's calculation of RfD includes a parameter called the Modifying Factor (MF).

From "Reference Dose (RfD): Description and Use in Health Risk Assessments Background Document 1A March 15, 1993" -

"Modifying Factor (MF):"
"Use professional judgment to determine the MF, which is an additional uncertainty factor that is greater than zero and less than or equal to 10." 47-13

("greater than zero" - The value 0.0000001 is greater than zero)
"The magnitude of the MF depends upon the professional assessment of scientific uncertainties of the study and data base not explicitly treated above; e.g., the completeness of the overall data base and the number of species tested. The default value for the MF is 1."

"Source Adapted from Dourson and Stara, 1983"

While technically this doesn't allow multiplication by exactly zero, but it does allow multiplication by a number as close to zero as you can imagine (e.g. 0.00000000000000000001) This renders all other careful measurements of hazard and risk used in RfD meaningless because this MF is determined purely by "professional judgment." This is hardly science.

We request that you publish all Modifying Factors for every pollutant noting clearly those pollutants which have no RfD AND create new ones that meaningfully reflect the hazard for human and listed species health.

WATER QUALITY ONLY
The proposed order is only intended to regulate threats to water quality. (pg ES-7 para 3) It does not provide any component to analyze impacts on food, foods crops, humans consumption of foodcrops or any other agricultural effects. This is an outrageous "oversight."

The proposed General Order only proposes to "reduce" potential disease-causing organisms. This is outrageously inadequate. This proposed General Order is not for the poorest areas of China, India or Antarctica. It is for the 8th largest economy in the world with among the highest standard of living! 47-14

This shows the folly of neglecting to include State Department of Health Services as a responsible agency.

SURFACE WATER v GROUNDWATER
Surface water impacts are not always analyzed in the DEIR - only groundwater. Please re-examine all impacts upon surface waters especially in light of the Safe Drinking Water Act USC 42, 300f,j-8. SDWA regulates Maximum Contaminate Levels measured at the tap. It covers at least 81 pollutants - different from 126 of CWA. Toxics from underground sources or leaks from landfills in drinking water. 47-15

Please also discuss how allowing any pollution in any body of water is consistent with the Clean Water Act, 1972-1987, USC 33 Sec 1251-1376
CWA Primarily regulates Municipal Sewage, Industrial Discharge and Agricultural runoff.

CWA covers at least 126 priority pollutants. These are different from SDWA's 81 pollutants.

CWA covers all Bodies of Water within the US (33 CFR 1362(7))
CWA covers among other waters: All waters, including their tributaries, subject to the ebb and flow of tide (every creek which eventually flows into the sea); and all waters, including their tributaries, ever used for interstate and foreign commerce. 33 CFR Sec 328.3(a); and isolated inland waters regularly used by endangered species or migratory birds. 47-15 (cont)

REDUCTION DOES NOT MEAN SAFE
The proposed General Order only proposes to "reduce" potential disease-causing organisms. "Reduce" is not quantitative or meaningful. Please provide a quantitative limit. 47-16

"ITS WITHIN LEGAL LIMITS" - *IS IRRELEVANT*
"We're not exceeding legal limits (of the 503 Regulations)." The only relevant question is - Is that good enough?

Using Legal (or governmental) Limits for Pesticides is mostly irrelevant. The only relevant question to ask about the pesticides use is, "Is it low enough to completely protect the public interest and the environment?"
Legal limits may appear to be scientific limits, but they were political limits when they were set. One thing you can be sure of - when some corporation can make lots of money by lobbying to set a human health limit or when an agency can spend less money doing what it has to - health limits are not limits set by science. For example the 1958 "Delaney Clause" caused Pesticide Manufacturers problems because it absolutely prevented the use of certain pesticides. 47-17a

They put immense constant pressure on EPA and it became EPA's problem.
EPA decided to "regulate" substances that were totally prohibited! This is exactly like having a Police department deciding to allow a certain amount of murder or rape - even though they are prohibited. The Federal Courts found, without any ambiguity, that EPA's decision was absolutely wrong and overturned their regulation.

What is a complexity rating and what does it mean?
Why do both 40 acres and 40-200 acres have the same "b' rating? 47-17b

PATHOGENS NOT ELIMINATED
Potential disease-causing organisms should be eliminated - not reduced.
Pathogens will not be completely eliminated - only reduced to an ambiguous and unstated level. If pathogens are allowed in finished land applied sludge, this will have a potentially significant impact due to the health hazards. Identification, quantification and avoidance of potential pathogens BEFORE project approval is required by CEQA. 47-18

Remembering that you are under a Superior Court Order - Please re-write each food crop harvest restriction to ADD a pathogen level trigger - before which food crops can not be planted. Then recirculate this as an SEIR.

PATHOGENS v. TIME
The proposed General Order only restricts food crop harvesting, grazing, public access with a time period. Time is absolutely irrelevant to hazard.
Pathogens can increase over time - especially in fertile ground such as that used for agriculture! 47-19

The only relevant measure is the pathogen level.
Yet "RISK ASSESSMENTS WERE NOT PERFORMED" pg 5-10
Perform the risk assessments!

CLEAN WATER ACT & SAFE DRINKING WATER ACTS IGNORED
The proposed General Order clearly prohibits any application which could cause a Calif Prop 65 violation. Why aren't US Clean Water Act violations and Safe Drinking Water Act similarly prohibited? 47-20

Following the mandates of the US Clean Water Act - No application should be allowed where a heavy rain can wash any of the sludge into any class 3 watercourse or larger stream.

Runoff pollutants may require Clean Water Act 401 or 404 permits. Please consult with Army Corps of Engineers to determine whether such permits are needed. 47-21

Runoff pollutants may violate the Safe Drinking Water Act Please consult with EPA to determine whether such thresholds will be exceeded 47-22

COMBINED SEWAGE SYSTEMS
Please list is detail all Sewage Systems in California that have absoutely separate industrial and residential sewage pipes. We don't believe there are any.

Please analyze separate industrial and residential sewage pipes as mitigation. 47-23

Please analyze separate industrial and residential sewage pipes as an Alternative.

Very specifically what is "stabilized" sewage sludge? pg ES-6

ANIMALS MISSING
Pg 7-10 appears to contain several errors.
Under "Definition of Special Status Species" it states -

"Plants listed or proposed for listing as threatened or endangered under the federal ESA (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the Federal Register [proposed species]);"

We suspect that the word "animals" was inadvertently left out and ask that it be inserted like this -

"Plants AND ANIMALS listed or proposed for listing as threatened or endangered under the federal ESA (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the Federal Register [proposed species]);" (Added words capitalized)

Several following Bullet points seem to have the same omission. Please correct this and all impact analysis related to it. We suggest the following: 47-24

Definition of Special Status Species
Plants and animals listed or proposed for listing as threatened or endangered under the federal ESA (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the Federal Register [proposed species]);
Plants and animals that are candidates for possible future listing as threatened or endangered under the federal ESA (62 FR 182:49397-49411, Sept 19, 1997);
Plants and animals listed or proposed for listing by the state of California as threatened or endangered under the California ESA (14 CCR 670.5).
Plants listed under the California Native Plant Protection ACt (California Fish & Game Code, Section 1900 et seq.).
Plants and animals that meet the definition of rare or endangered under CEQAA (State CEQA Guidelines, Section 15380), including those considered by CNPS to be rare, threatened, or endangered in California (Lists 1B and 2 in Skinner and Pavlik 1994);
Animal species of special concern to DFG (Remsen 1978 [bird], Williams 1986 [mammals], and Jennings and Hayes 1994 [amphibians and reptiles]; and
Animals fully protected in California (California Fish & Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

LISTED SPECIES HABITAT IMPACT CRITERIA IGNORED
The DEIR substantially misstated a highly important and vitally relevant criteria for determination of significant impacts on listed species (pg 7-9) - 47-25

CEQA Guideline 15065 clearly states "... reduce the number or ***restrict the range*** of an endangered, rare or threatened species."

RESTRICT THE RANGE is dramatically different from "substantially affect." In the famous Mira Monte case the loss of only a quarter acre of plant habitat triggered a mandatory Finding of Significance.

In light of the massive amounts of listed species habitat which could be adversely affected by this project the DEIR needs to be re-written, with re-consultation and recirculation. Please correct this and all impact analysis related to it. 47-25 (cont)

LEGAL AND PHYSICAL ESA SPECIES IMPACT ANALYSES NEEDED
The Impacts of Sludge Application on species, especially birds and amphibians, listed under the US and California Endangered Species Acts (ESA) need to be evaluated with extreme conservative caution.
The ESA consultation and Biological Opinion must be completed BEFORE the activity takes place. We hope it is not necessary to litigate to insure this occurs in this case.

SWRCB has no exemption from an ESA Section 10 consultation regarding the impacts on listed species.

Each of the following federal and state listed species occurs in California or has habitat in California that could be affected by this sludge application. We request that the impacts on each of these species, their habitat and their food chain (both as predator and as food) be included in the formal ESA consultation and that all impacts on them be quantified PRIOR to use.

Southern Sea Otter Blue Whale Humpback Whale Condor
Bald Eagle Marbled Murrelet Northern Spotted Owl Great gray owl Elf owl Western
Snowy Plover Habitat
Great Horned Owl Western Snowy Plover American Peregine Falcon California Brown Pelican Least
Bell's vireo Swainson's hawk California Least Tern Pallid Bat Bank Swallow Willow
Flycatcher Osprey (Pandion haliaetus) San Joaquin Kit Fox Monterey Dusky-Footed Woodrat Monterey
Ornate Shrew Smith's Blue Butterfly California red-legged frog
West Coast Steelhead Tidewater Goby Coho Salmon Fairy Shrimp habitat
Grizzly Bear Mountain Lion Gray Whale (delisted) White Abalone Black Abalone
Pink Abalone Green Abalone Southwestern Pond Turtle
California Red-Legged Frog Santa Cruz long-toed salamander 47-26

We ask that you -

a. Submit a written request to the Secretaries of Interior (for US-FWS) and Commerce (for NMFS) for a list of species that "may" be present in the "action areas."

b. Since it is essentially admitted in your documentation that listed species will be present in the action areas, we request you have the Secretaries initiate a Biological Opinion on the impacts of Sludge Application AND ITS DEGRADATES AND METABOLITES on ALL listed BIRD, amphibian and fish species which could be potentially present or downstream or downwind of any action areas, and
c. Initiate a formal consultation with the US Fish & Wildlife Service on the impacts of Sludge AND ITS DEGRADATES AND METABOLITES on ALL listed BIRD, amphibian and fish species which could be potentially present or downstream or downwind of any action areas.

The threshold of harm (loss of a single individual) is recognized by the California Environmental Quality Act Section 15065 which deems the death of a single individual of a listed species, or the loss of any habitat of a listed species is a significant impact. Use of this poison in California will undoubtedly -

a. kill at least one individual of a listed species and
b. cause the loss of any habitat of a listed species.

ENFORCEMENT AT LEAST INFEASIBLE, PROBABLY IMPOSSIBLE
Inability to Enforce Conditions of Approval

CEQA Section 21081.6(b) states
"A public agency SHALL provide that measures to mitigate or avoid significant effects on the environment are ***FULLY ENFORCEABLE***...." 47-27

Our dictionary defines "enforce" as "able to impose performance."
1) All conditions must have a numeric goal and a completion date.

Non Quantified Mitigations and Conditions can not be enforced. When a condition has no numeric or completion date performance goals it is not possible to objectively, or judicially, determine whether the goal has been achieved. This makes that condition unenforceable failing the CEQA Section 21081.6b mandate.

2) SWRCB has no process or method of tracking or enforcing conditions of project approval. The process actually turns over monitoring to the discharger (i.e. Giving a Fox the keys to the Henhouse!; "Gosh, I'll just send in the samples from the sludge that I save for testing purposes.")

3) SWRCB has repeatedly failed to enforce conditions of approval. (Examples can be found by checking the Regional office's complaint logs and comparing them to the enforcement files.)

4) Conditions must be Citizen Enforceable.
In order to be fully enforceable, a discharger's or land owner's failure to perform conditions must be able to be brought by a citizen before a judge.

When SWRCB has the authority to enforce mitigation conditions and they, however accidently or neglectfully fail to, or chose not to monitor or enforce a condition, that condition is not "fully enforced" or fully enforceable. 47-27 (cont)

Thus any conditions imposed by SWRCB are not "Fully Enforceable" as required by CEQA Section 21081.6b unless each can be brought by a citizen before a judge.

All of the above is Substantial Evidence showing that SWRCB, for whatever reasons (whether they are incapable of or unwilling to), do not monitor or enforce conditions of project approval to be able to "fully enforce" them.
Thus NO conditions imposed by SWRCB can be reasonably claimed to be "FULLY ENFORCEABLE" as required by CEQA Section 21081.6b unless they contain citizen enforcement provisions.

Until SWRCB can demonstrate an ability to fully enforce conditions of past approvals no new conditions, lacking citizen enforcement provisions are legal under CEQA Section 21081.6b.

Only when SWRCB can either -
1) increase enforcement to adequately monitor all approved conditions, or 2) stop or reduce approvals to the level of the SWRCB's capacity to monitor and enforce all approved conditions can CEQA's 21081.6b requirement be achieved.

AGRICULTURAL USE OF SLUGDE IN COMPOST IS NOT PROHIBITED.
If Sludge is uses in compost and taken offsite for agricultural use, the heavy metals (e.g. lead) and chemicals can get into food products and groundwater. These are significant impacts. This must be analyzed for potential impacts or prohibited. 47-28

* Please state clearly (YES or NO) if Sludge Composting would be allowed under this Proposed Order. If land application of sludge would be allowed after composting - this GO must be rewritten to clearly spell that out and this EIR must be re written and recirculated.

Finally, please evaluate an alternative which separates residential and commercial and industrial sewage - at the sources. 47-29

SUMMARY
In conclusion we object to regulation of Sewage Sludge disposal anywhere other than in hazardous waste facilities as it is indistinguishable from hazardous waste disposal. After reading this DEIR we conclude that if there is a safe way to apply Sewage Sludge to Land - the proposal and SWRCB are not capable of achieving it. 47-30

<u>After examining your DEIR we want Sewage Sludge Land Application prohibited, banned and stopped.</u>

In addition to the substantive comments above, there seems to be an additional procedural error. We do not find where you consulted with State and Federal Agencies as required by CEQA Sections 21080.3, 21104, 21153; 15086 and 15104 and discussed required subjects required by CEQA Section 15126. Please consult with ALL proper agencies and release the environmental documents for public review after they are rewritten, after consultation. 47-31

In keeping with CEQA Sections: 21092.b3 and 21092.2, please put us on your list of "Interested Parties" so we get all notices of the project. 47-32

Please acknowledge receipt of this letter within 5 days.
We look forward to your legally adequate response.

With all due respect,

Benjamin "Bowana" Marchand, Executive Director

The following documents are included by reference:

[A] RACHELS ENVIRONMENT & HEALTH WEEKLY #560
August 21, 1997 A NEW U.S. WASTE STRATEGY EMERGES, PART 1

[B] RACHELS ENVIRONMENT & HEALTH WEEKLY #561
August 28, 1997 NEW U.S. WASTE STRATEGY, PT. 2: SEWAGE SLUDGE

[1] Herbert R. Pahren and others, "Health risks associated withland application of municipal sludge," JOURNAL OF THE WATERPOLLUTION CONTROL FEDERATION Vol. 51, No. 11 (November 1979),pgs. 2588-2601.[2] J.G. Babish, D.J. Lisk and others. ORGANIC TOXICANTS ANDPATHOGENS IN SEWAGE SLUDGE AND THEIR ENVIRONMENTAL EFFECTS[Special Report No. 42] (Ithaca, N.Y.: Cornell University,December, 1981).

[8] The "Part 503" sewage sludge regulations are available on diskette from the National Technical Information Service [NTIS]; telephone 1-800-553-6847; purchase item No. PB93-500478INC; price: $60.00.

[8b] Robert Goodland and Abby Rockefeller, "What is Environmental Sustainability in Sanitation?" IETC'S INSIGHT [newsletter of the United Nations Environment Programme, International Environmental Technology Centre] Summer, 1996). pgs. 5-8. The International Environmental Technology Centre can be reached at: UNEP-IETC, 2-1110 Ryokuchikoen, Tsurumi-ku, Osaka 538, Japan. Telephone: (81-6) 915-4580; fax: (81-6) 915-0304; E-mail: estrohma@unep.or.jp; URL: http://www.unep.or.jp/.

[9] Simon R. Wild and others, "The Influence of Sewage Sludge Applications to Agricultural Land on Human Exposure to Polychlorinated Dibenzo-P-dioxins (PCDDs) and -Furans (PCDFs)," ENVIRONMENTAL POLLUTION Vol. 83 (1994), pgs. 357-369. And see: Michael S. McLachlan and others, "A Study of the Influence of Sewage Sludge Fertilization on the Concentrations of PCDD/F and PCB in Soil and Milk," ENVIRONMENTAL POLLUTION Vol. 85 (1994), pgs. 337-343.

[12] J.E. Welch and L.J. Lund, "Zinc Movement in Sewage-Sludge-Treated Soils as Influenced by Soil Properties, Irrigation Water Quality, and Soil Moisture Level," SOIL SCIENCE Vol. 147, No. 3 (March 1989), pgs. 208-214.

[13] J.F. Schmidt, "Understanding Phytotoxicity Thresholds for Trace Elements in Land-applied Sewage Sludge," JOURNAL OF ENVIRONMENTAL QUALITY Vol. 26 (January -February 1997), pgs. 4-10.
[14] Ed Haag, "Just Say No," DAIRY TODAY (March 1992), pgs. 82-83.
[19] Donald J. Lisk and others, "Survey of Toxicants and Nutrients in Composted Waste Materials," ARCHIVES OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY Vol. 22 (1992), pgs. 190-194.

[20] Min-Jian Wang and Kevin C. Jones, "Uptake of Chlorobenzenes by Carrots from Spiked and Sewage Sludge-Amended Soil," ENVIRONMENTAL SCIENCE AND TECHNOLOGY Vol. 28, No. 7 (1994), pgs. 1260-1267.

[21] Min-Jian Wang and Kevin C. Jones, "Behaviour and Fate of Chlorobenzenes (CBs) Introduced into Soil-Plant Systems by Sewage Sludge Application: A Review," CHEMOSPHERE Vol. 28, No. 7 (1994), pgs. 1325-1360.

[22] Rufus L. Chaney. "Public Health and Sludge Utilization," BIOCYCLE (October 1990), pgs. 68-73.

[23] A C. Chang and others, "Cadmium Uptake for Swiss Chard Grown on Composted Sewage Sludge Treated Field Plots: Plateau or Time Bomb?," JOURNAL OF ENVIRONMENTAL QUALITY Vol. 26 (January -February 1997), pgs. 11-19.

[24] Yutaka Iwata and others, "Uptake of a PCB (Aroclor 1254) from Soil by Carrots under Field Conditions," BULLETIN OF
ENVIRONMENTAL CONTAMINATION & TOXICOLOGY Vol. 11, No. 6 (1974), pgs. 523-528.

[25] John Stauber and Sheldon Rampton, "Toxic Sludge is Good for You", Common Courage Press, 1995.

47-1. For industrial waste response, see Response to Comment 44-12.

California is the leader in pesticide use, but the comment implies that all pesticides used ultimately end up in biosolids. There are no conclusive scientific studies that show this to be true. Biosolids have been extensively tested and show extremely low levels of pesticides. Additionally, the proposed GO requires a preapplication report where biosolids are tested for pesticides. Limits for pesticides were not set for biosolids because the low levels of pesticides they contained did not pose a risk to human health and the environment.

Lead accumulation in soil from biosolids land application has been studied extensively. Lead limits established in EPA's Part 503 regulation are more than sufficient to protect human health and the environment.

There are other measures that prevent "hazardous pollutants" from entering a POTW. Hazardous pollutants are controlled through pre-treatment programs because they would destroy the biological treatment process.

47-2. The agencies listed by the commenter are not responsible agencies under CEQA. The proposed project is adoption of a regulatory tool related to the land application of biosolids. None of the listed agencies have any regulatory authority over adoption of a GO by the SWRCB; none, therefore, would need to use this EIR in making a discretionary decision on the proposed project. These agencies have been consulted in the process of developing the proposed GO or scoping the content of the EIR. If individual projects being considered under the proposed GO would need additional permit approval from other state or federal agencies because of the presence of wetlands, protected species or other resource issues, additional environmental review would probably be required and the appropriate additional agencies would be consulted in the CEQA process.

47-3. The commenter's opinion that use of the term "biosolids" is doublespeak is noted. This term is now the industry standard when describing sewage sludge that has been treated and tested sufficiently to allow for its beneficial reuse. The term is intended to differentiate between untreated or minimally treated sewage sludge that is typically stored onsite or disposed, and sewage sludge that is of sufficient quality to provide a benefit from reuse as a soil conditioner or fertilizer.

47-4. Referring to sewage sludge or biosolids has no relevance to the scientific facts that show sewage sludge/biosolids are safe for land application. The term "biosolids" is used as a standard in the industry and is officially recognized in Meriam-Webster's Collegiate Dictionary, 10th edition (published in 1999).

47-5. Sewage treatment plants, in most locations, accept a multitude of different waste streams. However, their primary contributor is domestic sources. This source does not change significantly and neither does the resulting sewage sludge or its product biosolids. Also see Response to Comment 21-72.

47-6. RWQCB staff can include registered civil engineers, certified geologists, certified engineering geologists, biologists, toxicologists, certified hydrogeologists, and laboratory technicians specializing in water quality issues and environmental issues. These staff interface with the regulated community on a day-to-day basis. Operators and laboratory technicians are also trained professionals with licensing and certification requirements.

47-7. Oversight by the State and by EPA is adequate public protection against improper testing and reporting procedures. Currently, many land application sites are not subject to the level of regulation proposed by the GO. See Response to Comment 47-6.

47-8. The comment addresses several issues associated with industrial wastes, reported inadequacies of EPA Part 503 regulations for not regulating all toxic compounds, and health hazards from transfer of pollutants from biosolids through the food chain. The comment implies that the proposed GO may be less protective in cases where biosolids are derived from wastewater treatment facilities that receive a greater proportion of industrial wastewater than municipal wastewater. Most larger POTWs, under the Clean Water Act, have a pretreatment program that monitors and controls all the pollutants coming into the POTW. Larger POTWs have extensive pretreatment programs that typically include extensive monitoring programs beyond what is required. Larger facilities also have less of a chance of having drastic spikes in toxics because of the facility's sheer size. Therefore, there is no reason to conclude that biosolids derived from different facilities would be less protective under the proposed GO. The preapplication report would determine the concentration of specified metal and organic pollutants in the biosolids proposed for land application, and differences in concentrations would be considered through permit restrictions on cumulative loading rates.

Exclusion of toxic substances from EPA's Part 503 regulations does not mean that these compounds were not evaluated. On the contrary, EPA conducted an extensive screening process with National Sewage Sludge Survey results to identify the probability of toxic compounds being present in typical biosolids. EPA then conducted risk assessments on all non-regulated organic compounds and trace metals that would reasonably be expected to be in biosolids. The risk assessment concluded that the risk to public health and the environment from these compounds was negligible. Reports on the inadequacies were reviewed as part of the draft EIR process and found to lack sufficient scientific basis. EPA has successfully refuted claims of inadequacies as well. Claims from site-specific case studies that the comment letter presents are an example of why EPA used multiple conservative factors for the risk assessments. By using redundant and conservative factors in the risk assessments, biosolids application under the Part 503 regulations and proposed GO effectively reduce the risks so that site-specific conditions that could lead to higher

exposures to toxic substances will still be well within the range that protects human health and the environment. Also see Response to Comments 21-57 and 26-28 regarding uptake of metals in certain crops.

47-9. Lead is a regulated pollutant in the proposed GO. The limit is derived from EPA's risk assessment performed for biosolids. Pesticides were tested for in the NSSS; most were not detected in approximately 95 percent of the sewage treatment plants surveyed. Aldrin and dieldrin were the two pesticides identified in the NAS peer review as pollutants that should be evaluated further during the next sewage sludge survey. The proposed GO requires monitoring for those pollutants. Asbestos is not believed to be a pollutant of concern for biosolids. Also, see Responses to Comments 21-72 and 28-11.

47-10. SWRCB staff respectfully disagrees with the assertion that biosolids application should be prohibited because biosolids may contain potentially toxic compounds. The risk from exposure of people, livestock, organisms, and the environment to substances that may be present in biosolids is related to numerous factors, including the amount and rate of exposure to the substance, concentration of the substance, route of transport (such as air, soil, and water), and numerous environmental factors affecting the fate and transport of the substance.

EPA evaluated the risks from exposure to compounds in biosolids from around the country and established the numerical limits for biosolids application based on conservative assumptions for the various risk factors. Consequently, SWRCB staff does not consider biosolids application to be harmful when managed as set forth through the provisions in the proposed GO. Site-specific reports challenging the adequacy of the risk assessments were reviewed during the draft EIR process and found to lack sufficient scientific basis to warrant further modification in the proposed GO. EPA has successfully refuted claims of inadequacies as well.

47-11. The opinion expressed is noted. It is agreed that lead is an environmental hazard, particularly to young and unborn children. The EPA Part 503 regulations were based on extensive risk assessments used to derive the standards, including the limitations on lead, which are being used as a basis for the proposed GO limitations of the cumulative loading rate not to exceed 300 kilograms per hectare (267 pounds per acre). Loadings at this rate were not found to be a significant risk through the 14 pathways evaluated in the Part 503 risk assessments, including direct exposure to children.

47-12. As stated on draft EIR page 3-17, the impact of synthetic organic compounds (SOCs) in air is minimal. These compounds are not regulated in biosolids because of their low concentrations and minimal risk (see draft EIR page 5-32). As stated on page 5-33, the level of pesticides in biosolids is low and poses no excessive risk via biosolids land application exposure pathways that might impact human health, including respiratory pathways (U. S. Environmental Protection Agency 1995). ABT Associates Inc., in its 1992 assessment of the human health risks associated with land application of biosolids, calculated the rate at which organic contaminants would volatilize from sludge. Contaminants reviewed included

benzene, benzo(a)pyrene, bis(2)ethylhexylphlate, chlordane, DDT, lindane, PCBs, and trichloretheylene (ABT Associates 1992). ABT calculated that the total lifetime cancer risk from exposure to these contaminants (from land applied biosolids in air) was 5×10^{-6} for a Highly Exposed Individual and 6×10^{-7} for the average individual. This is a very low rate; almost all potential risk is associated with PCB exposure. To add a further safety margin to the conservative factors integrated into the Part 503 regulations, Mitigation Measures 4-2 and 5-2 were included to extend from 30 days to 60 or 90 days the time during which grazing is prohibited. This will allow more time for SOCs to volatilize and for pathogens to die off.

Also see Response to Comment 28-10.

47-13. This comment contained an opinion regarding the validity of the health risk assessments prepared by EPA in support of the Part 503 regulations. The EPA risk assessment process, after full consideration, is considered scientifically valid by SWRCB staff. While disputed by some, these regulations are national standards. The health risk assessment process was reviewed and supported by the NAS. Presentation of specific data from these documents is of national relevance but is not needed to support the conclusions in this EIR.

47-14. Paragraph 3 on page ES-7 of the draft EIR refers only to water quality because that is the framework for establishing filing fees under SWRCB regulation. The proposed GO is intended to protect all elements of the state's environment, including the public's health. State water quality standards are designed to protect beneficial uses of California's water resources, including human consumption. CEQA requires that the state consider and avoid any adverse effects of its actions, including the adoption of regulations. The potential impacts on human health and agricultural productivity are considered in detail in the draft EIR (see Chapters 4 and 5).

In addition to requiring a significant reduction in disease-causing organisms, the proposed GO mandates a list of land management and site access restrictions designed to protect the public from contamination of any crops, water or soil.

The DOHS has been consulted during development of the proposed GO and its EIR. The DOHS was represented on the technical advisory committee that reviewed the early drafts of the proposed GO and provided feedback as the proposed GO was developed into its present form.

47-15. Master Responses 13 and 17 generally describe the basis for the analysis of potential surface water quality impacts under the proposed GO. Responses to Comments 21-39, 21-41, 21-42, and 21-43 further address specific issues of the analysis of surface water quality impacts. SWRCB staff believes the evidence supports the EIR's conclusions that risk to surface water quality impairment from biosolids application is sufficiently low, additional protective measures are included, and each RWQCB engineer has authority to require individual waste discharge requirements for any application project that he or she feels would not conform to the proposed GO's provisions.

The SWRCB and RWQCB regulatory policies and procedures mandated under the State Porter-Cologne Water Quality Control Act were developed primarily to reflect the state's role in regulating water quality in compliance with federal water quality regulations, including the Clean Water Act and Safe Drinking Water Quality Act. Therefore, the SWRCB and individual RWQCB's implementation of permitting procedures under the proposed GO would be consistent with the federal laws.

47-16. There are no quantitative limits on potential disease-causing organisms in the proposed GO because it relies on the Part 503 regulations with regard to the definitions of Class A and Class B biosolids. The Part 503 regulations contain numerical limits for Class A and Class B biosolids for indicator organisms. Limits for individual pathogens have not been and are not likely to be developed because of the analytical difficulties and costs involved in analysis and enforcement of such limits. As with drinking water and food, individual pathogens are not specified in numerical limits, but indicator organisms are used to determine the relative safety of treatment and handling. The same applies to biosolids which are land applied and subject to beneficial reuse.

47-17a. As clearly stated in the draft EIR, the limits established in the proposed GO are based on the Part 503 regulations developed by the EPA over several years and based on scientific risk assessments. Elimination of organic compounds in the Part 503 regulations, including pesticides, was based on a comprehensive evaluation of the 1990 NSSS results. While risk assessments were not performed for all compounds potentially in biosolids, EPA decided to eliminate regulation, based on scientifically sound judgments with respect to the probability of environmental risks. EPA determined that regulations for organic compounds were not necessary because they were either present in sufficiently low concentrations, no longer allowed for manufacture or use in the U.S., or present at low frequencies among tested biosolids samples. Site-specific reports challenging the adequacy of the risk assessments were reviewed as part of the draft EIR process and found to lack sufficient scientific basis to warrant further modification in the proposed GO. EPA has successfully refuted claims of inadequacies as well.

47-17b. Complexity relates to the proposed GO's fee schedule and the relative operational difficulties associated with GO compliance. Both site sizes are given the same complexity rating because both must have similar management practices for compliance.

47-18. CEQA does not require that potential pathogens be identified, quantified or avoided before this project can be approved. The pathogen reduction and vector attraction requirements being embodied in the proposed GO are those promulgated as part of the EPA's Part 503 regulations. Standards for individual pathogens have not been established nationally for any regulatory program related to water, wastewater or biosolids. Indicator organisms for biosolids quality include fecal coliforms and salmonella.

47-19. The risk assessments on which the Part 503 regulations are based are acceptable for the purposes of developing regulatory limits in the proposed GO for chemical limits. Risk

assessments for pathogens are difficult to perform and may not be meaningful in terms of evaluating potential effects because of the numerous factors that must be considered, and the varying geography and population characteristics of California's 58 counties In evaluating any biosolids management program, the major microbiological consideration is the ability of the generator to effectively monitor for treatment efficacy and the reliability of the process used to effect pathogen reduction (National Research Council 1996). Measurement of pathogen levels are required in the proposed GO. There is little information in the literature suggesting that regrowth of bacteria in land-applied biosolids is a major issue or regulatory concern that would warrant more restrictions than provided for in the Part 503 regulations.

47-20. See Response to Comment 47-15.

47-21. Biosolids application projects would not typically involve permitting procedures under Section 404 and 401 of the Clean Water Act (CWA) which would involve the U.S. Army Corps of Engineers and RWQCBs. These sections of the CWA are primarily associated with discharges to water. Under the proposed GO, direct application of biosolids to water bodies is prohibited.

47-22. See Response to Comment 47-15.

47-23. The presence or absence of separate or combined industrial and residential sewer collection pipes in California has no relevance to the impact analysis. Regardless of the source of all wastes being received at a municipal wastewater treatment plant, the biosolids generated at that plant would have to meet the strict quality standards contained in the proposed GO before it could be applied to land. An alternative that would require separation of all industrial and residential sewage flows is not feasible because of the extreme cost and the inability of the SWRCB to mandate and implement such an option.

Stabilized sludge is sludge that has undergone one or several biological or chemical processes designed to minimize subsequent biodegradation of organic compounds. In biological stabilization processes, the organic material in sludge is reduced through biological degradation in controlled, engineered environments. In chemical stabilization, the aim is not to reduce the quantity of biodegradable organic matter in sludge; the goal is to create conditions that inhibit microorganisms and therefore retard degradation of organic material (National Research Council 1996).

47-24. The commenter is correct; animals were inadvertently left out of several of the special status species categories listed on draft EIR page 7-10. The words "and animals" should be inserted after the word "plants" at the beginning of the first, second, third and fifth bullet items under "Definition of Special-Status Species" on page 7-10. This change does not alter the impact significance determinations in Chapter 7.

47-25. The commenter is correct in that the EIR fails to list "restrict the range of an endangered, rare or threatened species" as a CEQA significance criteria. While this criterion was not listed

in the document, consideration of range restrictions was made in evaluating the potential adverse effects of implementing the proposed GO. These potential effects are also embodied in the thresholds dealing with affecting or disturbing habitat or biologically unique or sensitive natural communities. The most common way in which species' ranges are reduced is through habitat modification or loss. When considering whether a substantial effect was going to occur on sensitive species habitat, no acreage limitation was used as a supporting criterion. The only way in which implementation of the proposed GO might reduce the range of a protected species would be if existing habitat was tilled or covered by land application of biosolids. This potential effect is addressed in the EIR, beginning on page 7-11. Mitigation Measures 7-1 and 7-2 require the RWQCB to consider habitat destruction or the presence of sensitive species prior to issuing permits under the proposed GO. The impact and mitigation discussions in the draft EIR do not need to be modified to reflect this oversight in significance criteria. Draft EIR page 7-9 is modified by adding the following to the bottom of the page:

- restrict the range of an endangered, rare or threatened species

47-26. The draft EIR thoroughly considered whether implementation of the proposed GO affected federal and state protected species. The conclusion was that biosolids use in a typical agricultural setting would not significantly effect protected species (see pages 7-11 through 7-14). The primary concern was the potential for discing or other modification of untilled property or agricultural areas left fallow for more than one year. Mitigation capable of avoiding adverse effects in this situation are in the EIR (Mitigation Measures 7-1 and 7-2). Formal consultation under the federal Endangered Species Act is only required when a proposed project may adversely affect a protected species.

The proposed GO would not allow for permitting of a proposed land application operation that would have significant adverse effects on protected species. If such impacts were anticipated, the RWQCB staff would require application for waste discharge requirements on an individual project basis. Additional environmental documentation, including any mandatory consultation with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service, would occur before an individual permit could be issued.

47-27. The RWQCBs do take actions that meet the definition of enforcement. The proposed GO's application process and required annual monitoring program are tracked by the SWRCB and RWQCBs database. Also, the mandatory Pre-Application Report requires pertinent information used for measuring compliance. Since passage of the Clean Water Act, self monitoring for oversight programs has worked for the majority of sites. The SWRCB and RWQCB have full authority to enforce the GO requirements and any required mitigation. Also see Master Response 1 and Responses to Comments 21-75, 43-38, and 43-39.

47-28. The proposed GO would regulate the land application of composted material if it contained biosolids and met the conditions identified on the first page of the proposed GO (see page 1 of Appendix A in the draft EIR, items 1.b. and 1.c.). As indicated in the program

description on draft EIR page 2-3 (Horticultural Use), composted material is typically classified as Class A Exceptional Quality and is often used in horticultural operations. It may also, however, be used on agricultural land or in land reclamation activities. The proposed GO does not regulate facilities where composting occurs; these facilities are regulated primarily by the Integrated Waste Management Board and local enforcement agencies.

Any composted biosolids material applied to the land under the proposed GO would have to meet metals limitations. As required by the GO, heavy metals, including lead, could not be applied in sufficient concentration or volume to create a health risk or cause the productivity of the land to be significantly reduced.

47-29. A complete separation of residential and commercial/industrial sewage is not feasible any time in the near future. Federal and state regulatory agencies require close monitoring of effluents received by municipal treatment plants from commercial/industrial operations, and require the industries to develop comprehensive pretreatment programs to control discharge of contaminants. The agencies have not sought to totally separate these sources of sewage.

The proposed GO's objectives are to provide a flexible and uniform regulatory environment for the RWQCBs as they deal with permit applications for land application of biosolids. The SWRCB must also comply with the California Water Code (Section 13274) and a Superior Court of California judicial order. The separation of municipal and commercial/industrial sewage does not provide an alternative that meets these objectives. This alternative might reduce some of the contaminants that must be treated in wastewater facilities, but it would not avoid or reduce a significant adverse effect of implementing the proposed program.

47-30. The commenter's opinions are noted. No additional response is required.

47-31. SWRCB staff has developed and implemented an extensive agency and public consultation process for this EIR, as required by CEQA and its implementing guidelines. This process is described in detail beginning on draft EIR page 1-3. The list of individuals and agencies contacted in the Notice of Preparation phase of the CEQA process is included in Appendix B of the draft EIR.

The impact discussions required by CEQA Section 15126 are in draft EIR Chapters 3 through 14 and in the "Other CEQA-Required Impact Conclusions" section of the Executive Summary, beginning on page ES-14.

47-32. The Consumers Food Protection Association has been added to the list of individuals and agencies to be notified regarding future public involvement opportunities for the proposed GO and its EIR.